

**Testimony before the House Energy and Commerce Committee
Subcommittee on Environment and Hazardous Materials
On the Collection and Management of Commodity Grade Elemental Mercury
Presented by C. Mark Smith on behalf of Arleen O'Donnell Chair Cross-media Committee,
Environmental Council of the States and Acting Commissioner, Massachusetts Department
of Environmental Protection
June 22, 2007**

Thank you, Mr. Chairman and members of the Committee, for providing the Environmental Council of the States (ECOS) the opportunity to present testimony on the States Perspectives on Managing Commodity Grade Elemental Mercury. My name is C. Mark Smith and I am testifying on behalf of Arleen O'Donnell, the Acting Commissioner for Massachusetts Department of Environmental Protection and the Chair of the ECOS Cross-media Committee. I have been involved in mercury policy and research for over fifteen years and have been the Massachusetts representative to the Quicksilver Caucus since its inception. Currently I direct my agency's multimedia mercury program and Co-chair the New England Governors and Eastern Canadian Premiers Regional Mercury Task Force.

The Environmental Council of States is the national non-partisan, non-profit association of the leaders of state environmental agencies. Our members are the officials who manage and direct the environmental agencies in the States and territories. They are the state leaders responsible for making certain our nation's air, water and natural resources are clean, safe and protected.

Today I am here representing not only my own state, but also as a voice for all the environmental agencies in the states belonging to our organization and to the Quicksilver Caucus.

The Quicksilver Caucus, formed in May 2001 by a coalition of State environmental association leaders to collaboratively develop holistic approaches for reducing mercury in the environment. Caucus members who share mercury-related technical and policy information include the Environmental Council of the States (ECOS), the Association of State and Territorial Solid Waste Management Officials (ASTSWMO), the National Association of Clean Air Agencies (NACAA), the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), the Association of State Drinking Water Administrators (ASDWA) and the National Pollution Prevention Roundtable (NPPR). The Quicksilver Caucus' long-term goal is that State, Federal, and International actions effectively address mercury pollution.

Mercury is a public health and environmental health problem across the country and the globe. Environmental monitoring over the past two decades has demonstrated that mercury levels in fish from states across the United States (U.S.) are too high. As a result, as of 2004, 44 states had fish consumption advisories in effect because of mercury, affecting over 13 million lake acres and 767,000 river miles. National advisories for saltwater fish, such as shark, tuna and swordfish, are also in effect.

Mercury is such a concern because it is a potent brain toxin that adversely affects children and wildlife. Once released into the environment mercury persists and does not break down into harmless components like many other pollutants. It also bio-accumulates, or concentrates, into fish which, when eaten, are the major pathway for human exposures to this toxin. Although mercury is a natural element, due to human activities, the level of this toxin in the environment is much higher today than it was 150 years ago – for example mercury levels in

sediments from many New England and Minnesota lakes were found to range from 150% - 800% higher now compared to pre-industrial times.

The brain and developing neurological system of the fetus and children are particularly sensitive to mercury and can be damaged by fairly low levels of exposure. Of particular concern is the fact that children can be exposed to toxic amounts of this pollutant before birth because mercury in a mothers' diet crosses the placenta and enters the fetus. Based on data from the U.S. Centers for Disease Control, which has measured mercury levels in the blood of women across the country, *several hundred thousand newborns each year* are at risk of mercury toxicity in the U.S. because of their mother's exposure to mercury. Based on this data over 8,000 newborns are at risk each year in my state alone.

Because of its chemical properties mercury pollution knows no borders as it can be transported long distances in the atmosphere, creating trans-boundary issues that are regional, national and global in scope. Mercury is also a multimedia pollutant that can readily transfer between air, water and soils. Effectively reducing mercury levels in our state environments therefore requires effective multimedia programs at the regional, national and international level. Because the states are being impacted so significantly by mercury pollution and deposition, reducing sources of mercury releases at the national and international levels is a priority for us.

To minimize the potential for mercury releases, ECOS and the Quicksilver Caucus have had a long-standing interest in the management of commodity mercury. ECOS, beginning in September 1996, has consistently stated its opposition to future U. S. mercury stockpile sales and called for a permanent halt to any such sales; called on the United States Department of Defense,

the United States Department of Energy, and the United States Environmental Protection Agency (USEPA) to research and evaluate long term management, retirement and substitution options in cooperation with interested parties; urged all nations to end subsidies to mercury mining and sales; and urged USEPA to develop retirement options for mercury so that waste generators and waste treatment facilities may choose recycling or retirement.

In addition many states have adopted mercury products legislation to reduce mercury use and increase the recycling of mercury from remaining uses. Numerous states are also implementing extensive mercury collection and recycling programs, which are contributing to the excess U.S. supply of commodity elemental mercury. Exports of mercury concern the states because poorly regulated uses in other countries can result in direct exposures to their citizens and contribute significantly to overall global mercury releases to the environment and resulting impacts on our states.

The Quicksilver Caucus recently developed 14 principles that encompass the environmental position on elemental commodity mercury of the Environmental Council of States, the National Governor's Association and state associations representing air, water, waste, and pollution prevention. These principles articulate states perspectives for the development of comprehensive and effective management of elemental mercury in an environmentally secure manner at the local, state, national, and international level.

These principles are presented in their entirety below and include a number of provisions to: reduce the unnecessary use of mercury (principles # 1, 2, 3, and 11); restrict mercury export

(principles #6, 8 and 9); and safely store excess mercury (principles # 6 and 10). The principles specifically call for a prohibition on the export of elemental mercury to developing countries where the resulting uses can result in unsafe exposures. The principles also call on the U.S. to cease the export of elemental mercury, except for a limited number of essential uses where it can be demonstrated that the receiving country does not have sufficient domestic sources of its own secondary mercury. The QSC could only identify a small number of essential uses, including fluorescent lighting, some dental amalgam applications and, potentially, a select few scientific pieces of equipment. These are noted in principle # 3. Although other essential uses were not precluded, the QSC believes that these, if they exist, are likely to be very few in number and will likely decrease in the future as mercury-free alternatives are developed. The QSC principles would allow for limited exemptions from the suggested export restrictions for such essential uses provided they meet the other criteria stipulated in principle # 8. Decisions on these issues should be made by knowledgeable experts using an appropriate and transparent federal process. The creation of a National Advisory Committee, as called for in principle # 13 to develop recommendations for action, would provide a logical place for decisions to be made regarding the specific criteria and process to determine which mercury uses are essential and whether exemptions should be allowed in a particular situation.

The complete set of principles state that:

- 1) The manufacture and sale of non-essential uses of mercury-added products should be phased out in the long-term. Several mercury-added products can be phased-out in the

next three to five years including most uses of thermometers, manometers, thermostats, switches, relays and novelty items.

- 2) The best opportunities for achieving this goal will be to aggressively pursue multi-stakeholder partnerships, educate consumers and businesses and leverage federal and state environmental laws and regulations to accelerate such a reduction.
- 3) Reuse of elemental mercury should only be utilized in processes or products deemed essential. Few essential uses remain, but include fluorescent and compact fluorescent lamps, some restorations with dental amalgam, and perhaps a select few scientific pieces of equipment. For those uses of mercury that continue, capture and recycling of mercury-containing products at the end of their useful life should be required.
 - a. The United National Environment Programme estimates that globally, use of mercury in lamps and dentistry represent less than 15% of total uses, or even as little as 9%. Research should be conducted to determine whether there are any countries that do not have sufficient domestic sources of secondary (recycled) mercury for these purposes.
 - b. Federal and state governments should work with manufacturers to ensure adequate nationwide infrastructure exists for safe collection, storage and disposal of used mercury-containing lamps and other products through a product stewardship framework. This infrastructure should provide flexibility for States to maintain and to continue to develop, and implement their own strategies or regulatory programs.
 - c. Research should be supported to find safe alternatives to elemental mercury in those products deemed essential.

- 4) Research should also be conducted on the use and export of mercury compounds, including such mercury compounds as mercuric chloride and mercuric oxide, and in finding safe alternatives.
- 5) States and the federal government should continue to work with manufacturing sectors to address current and legacy uses of mercury in the manufacturing process (e.g., working with the chlor-alkali manufacturers to identify alternatives to mercury cell technology and where feasible, phasing out the use of the “mercury cell” manufacturing process).
- 6) Following the collection and recycling (retorting) of used mercury-containing products, the mercury should be sequestered and safely stored within the United States.
- 7) The United States should support mechanisms to better track international trade of mercury, mercury compounds, and mercury-containing products.
- 8) The United States should be a leader in proper use and management of elemental mercury by not exporting any mercury-containing products to other countries unless it is related to an essential use. Exporting surplus elemental mercury to developing countries where it can result in unsafe exposure should be prohibited. Elemental mercury should only be exported to other countries for essential uses where it can be demonstrated that the country does not have sufficient domestic sources of secondary (recycled) mercury.
- 9) The United States should prohibit imports of elemental mercury and mercury-containing products, unless the import is for sequestration.
- 10) Until a safe disposal technique is developed, temporary storage of elemental mercury should be in a safe, secure, continuously monitored location. Industries that generate significant amounts of elemental mercury should be responsible for the storage of their own mercury until a long-term solution in the United States is identified and

- 11) The United States should assist other countries in phasing out uses and applications of mercury and help them identify safe storage techniques to use for their mercury stockpiles until a long-term solution is identified and implemented.
- 12) The USEPA and states need to work together to track changes in the use of mercury-added products to measure the sources and amount of mercury that is collected. This needs to be correlated with (a) monitoring the releases of mercury to air, water, and land and (b) monitoring of fish tissue.
- 13) The Congress or the President should establish a National Advisory Committee to develop a comprehensive report that incorporates the principles set forth in this document and make recommendations for action by governments, industry, academia, and citizens and a time table for doing so.
- 14) The federal government should ensure that there is adequate funding to support the above mercury reduction activities at the federal, state, and local community levels of government as appropriate.

The QSC states hope that you consider using these principles as you develop the proposed legislation.

In conclusion, the states urge that:

- National elemental mercury stockpiles should not be sold but should continue to be safely stored;
- National and international strategies to address commodity elemental mercury production, use and “retirement” should be developed and implemented;
- Elemental mercury in excess of that needed for essential uses should be sequestered;
- The federal government should take responsibility for safely sequestering commodity mercury;
- National strategies/ programs addressing commodity elemental mercury should be developed in consultation with the states

To end, I would also like to provide an additional perspective on this issue from the standpoint of Massachusetts. The Commonwealth of Massachusetts has been significantly impacted by mercury pollution and has been very actively engaged in mercury reduction issues. In MA, over 50% of the water-bodies tested in the state have one or more species of fish with sufficiently high levels of mercury to warrant a consumption advisory and our state Department of Public Health warns pregnant women, children and nursing mothers to avoid consuming any native freshwater fish caught in the state

(http://www.mass.gov/Eeohhs2/docs/dph/environmental/exposure/fish_mercury_in_ma.pdf; <http://db.state.ma.us/dph/fishadvisory/>). In “mercury hotspot” areas like the northeast part of MA and southern New Hampshire, close to 100% of the tested water bodies have fish with elevated mercury levels (<http://mass.gov/dep/images/fishmerc.doc>). We have recently estimated that mercury deposition will need to be reduced by 86-98% to achieve water quality objectives in

relation to mercury levels in freshwater fish in the Northeast states. Such steep reductions cannot be achieved without significant reductions from national and international sources. In fact, mercury deposition modeling results from USEPA and other research groups indicate that a large fraction, ranging from about 60% to over 80%, of all mercury deposited in the U.S. comes from global sources. A ban on the export of U.S. elemental commodity mercury would be an important step that the U.S. could take to address the international sources of mercury emissions that impact waters of the U.S. Provisions can be added to the legislation to address unlikely but possible scenarios such as the need for essential uses of mercury that cannot be met without tapping U.S. mercury stockpiles.

Thank you for the opportunity to testify.

Attachment

Testimony before the House Energy and Commerce Committee
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Environmental Council of the States and Acting Commissioner, Massachusetts Department of
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SUMMARY OF KEY POINTS
June 22, 2007

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ECOS, beginning in September 1996, has consistently stated its opposition to future U. S. mercury stockpile sales and called for a permanent halt to any such sales; and urged USEPA to develop retirement options for mercury so that waste generators and waste treatment facilities may choose recycling or retirement.

In addition many states have adopted mercury products legislation to reduce mercury use and increase the recycling of mercury from remaining uses. Numerous states are also implementing extensive mercury collection and recycling programs, which are contributing to the excess U.S. supply of commodity elemental mercury.

The Quicksilver Caucus recently developed 14 principles that encompass the environmental position on elemental commodity mercury of the Environmental Council of States, the National Governor's Association and state associations representing air, water, waste, and pollution prevention. These principles articulate states perspectives for the development of comprehensive and effective management of elemental mercury in an environmentally secure manner at the local, state, national, and international level.

These principles include a number of provisions to: reduce the unnecessary use of mercury (principles # 1, 2, 3, and 11); restrict mercury export (principles #6, 8 and 9); and safely store excess mercury (principles # 6 and 10). The principles specifically call for a prohibition on the export of elemental mercury to developing countries where the resulting uses can result in unsafe exposures. The principles also call on the U.S. to cease the export of elemental mercury, except for a limited number of essential uses where it can be demonstrated that the receiving country does not have sufficient domestic sources of its own secondary mercury.

The QSC principles would allow for limited exemptions from the suggested export restrictions for such essential uses provided they meet certain criteria. Decisions on these issues should be made by knowledgeable experts using an appropriate and transparent federal process. The creation of a National Advisory Committee, as called for in principle # 13 to develop recommendations for action would provide a logical place for decisions to be made regarding the specific criteria and process to determine which mercury uses are essential and whether exemptions should be allowed in a particular situation.

From the perspective of my state, a ban on the export of U.S. elemental commodity mercury would be an important step that the U.S. could take to address the international sources of mercury emissions that impact waters of the U.S. Provisions can be added to the legislation to address unlikely but possible scenarios such as the need for essential uses of mercury that cannot be met without tapping U.S. mercury stockpiles.